



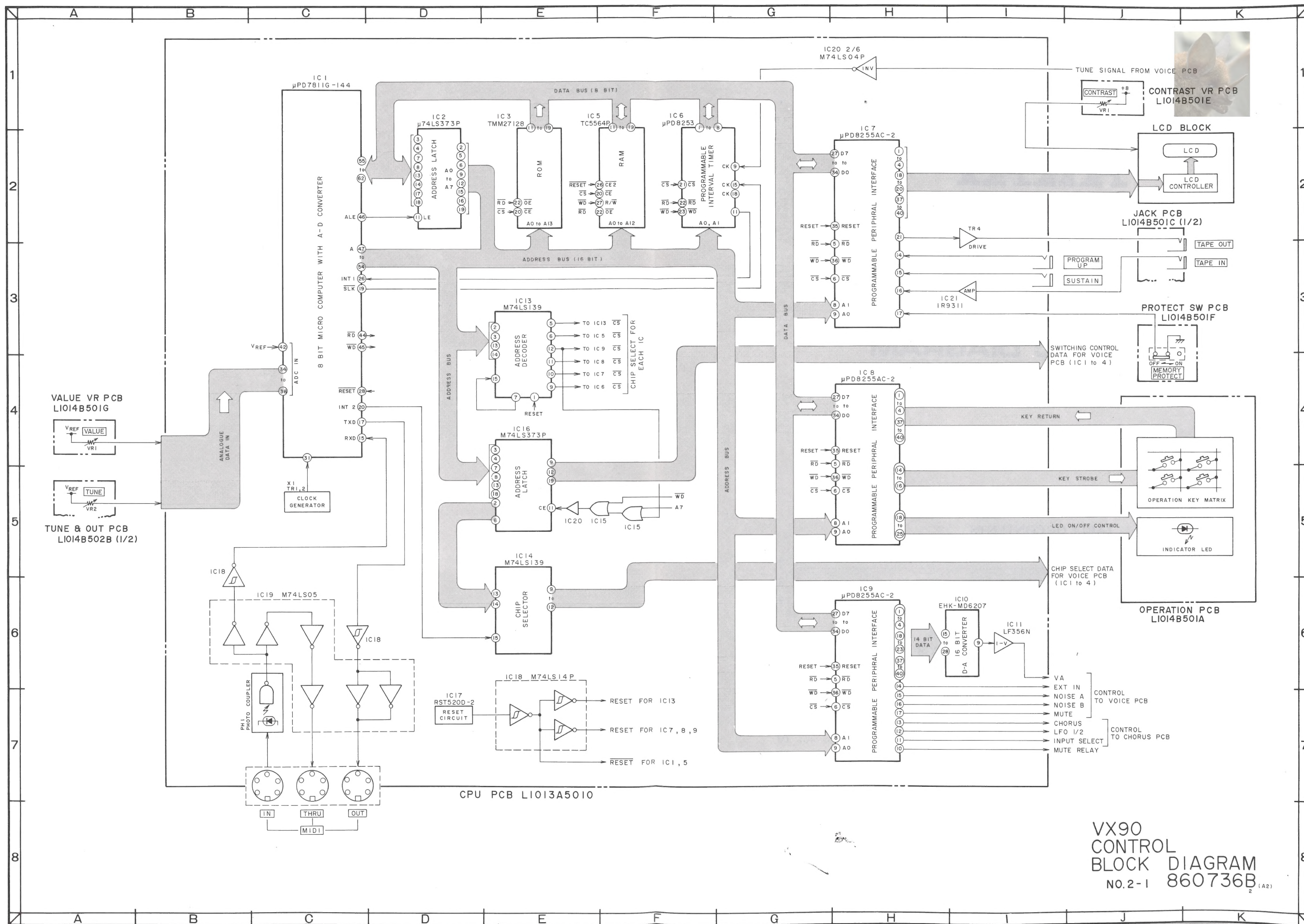
# AKAI

## MODEL VX90

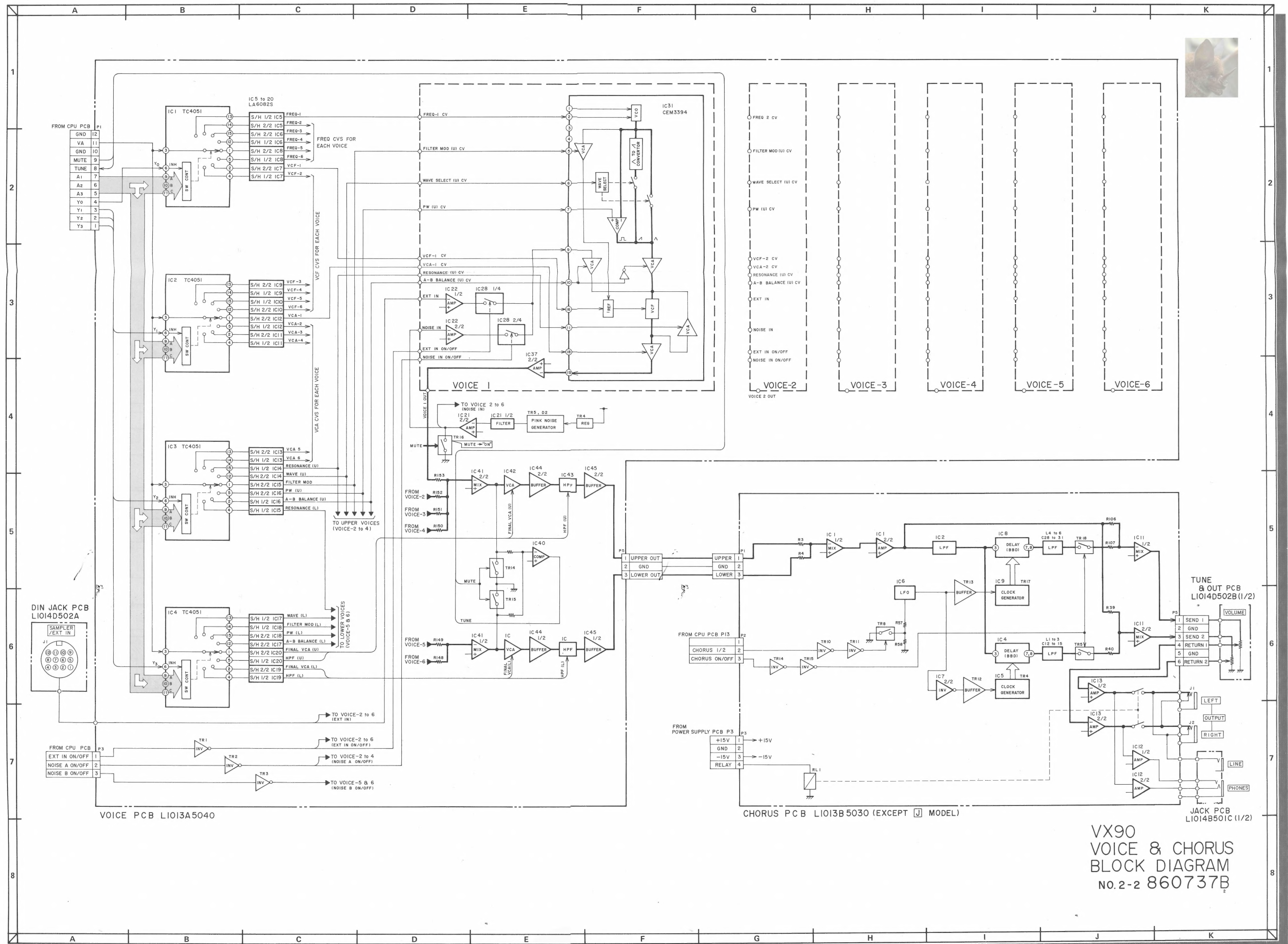
### SCHEMATIC DIAGRAM AND PC BOARDS

#### TABLE OF CONTENTS

1. CONTROL BLOCK DIAGRAM.....	2
2. VOICE & CHORUS BLOCK DIAGRAM.....	3
3. CONNECTION DIAGRAM.....	4
4. AMP PCB, CONTRAST PCB, DIN JACK PCB, JACK PCB, OPERATION PCB, POWER SW PCB, POWER SUPPLY PCB, PROTECT SW PCB, TUNE & OUTPUT PCB, VALUE VR PCB .....	5
5. CPU SCHEMATIC DIAGRAM .....	6
6. CPU PCB.....	7
7. VOICE SCHEMATIC DIAGRAM .....	8
8. VOICE PCB .....	9
9. CHORUS SCHEMATIC DIAGRAM.....	10
10. CHORUS PCB .....	11
11. ICs .....	12









1 VX90

2

3

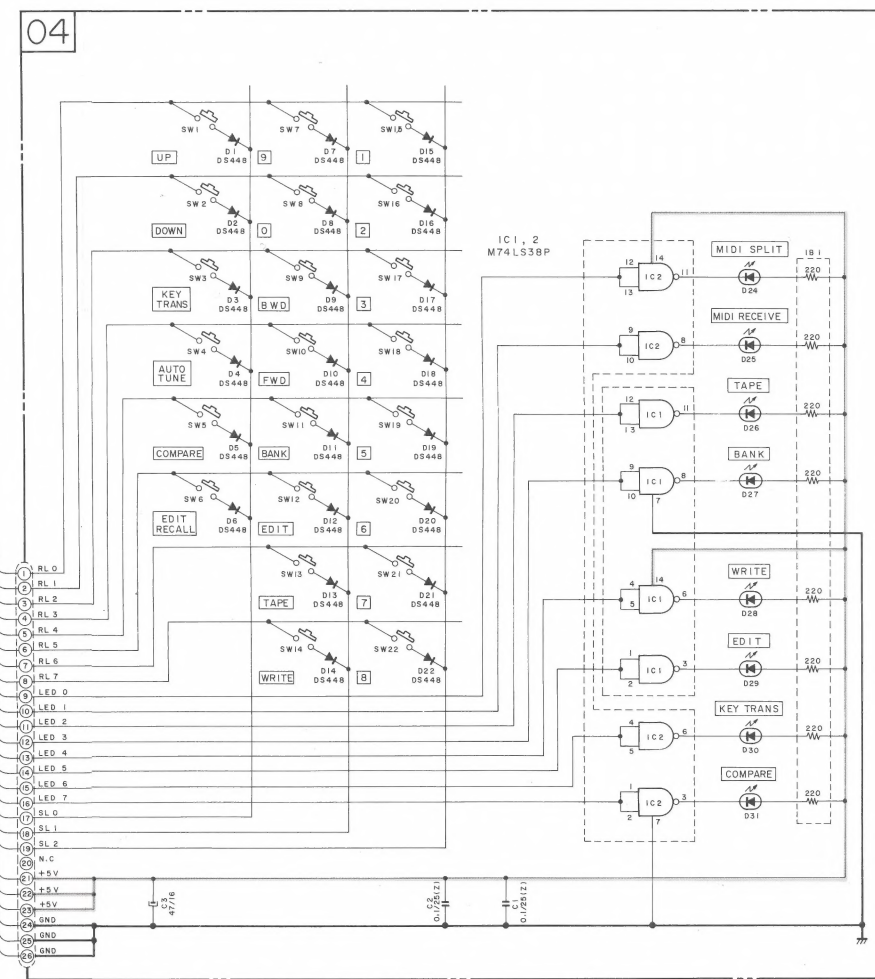
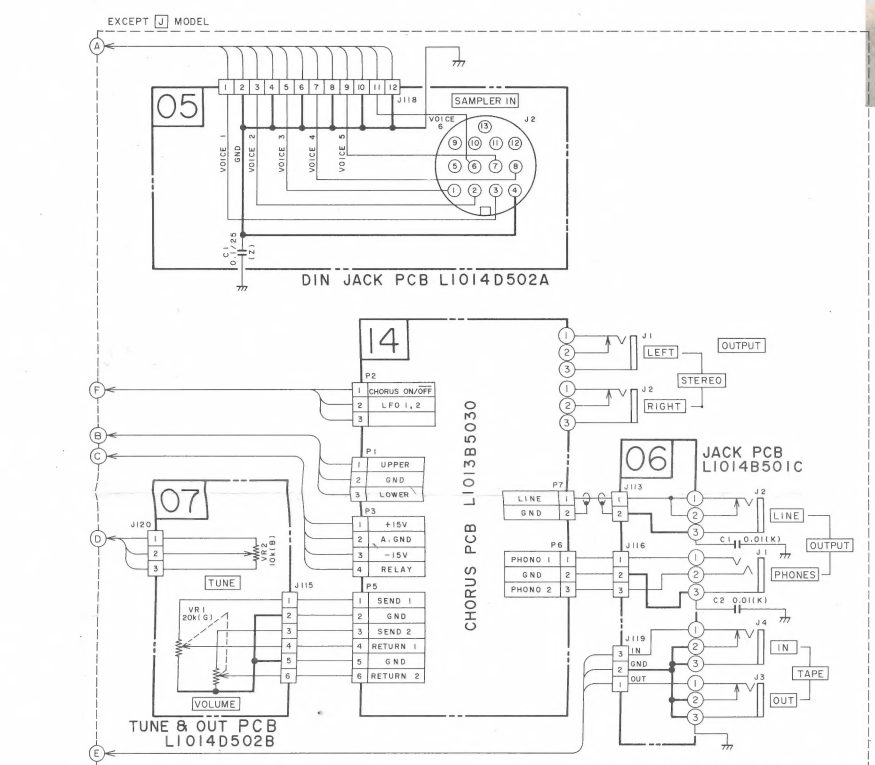
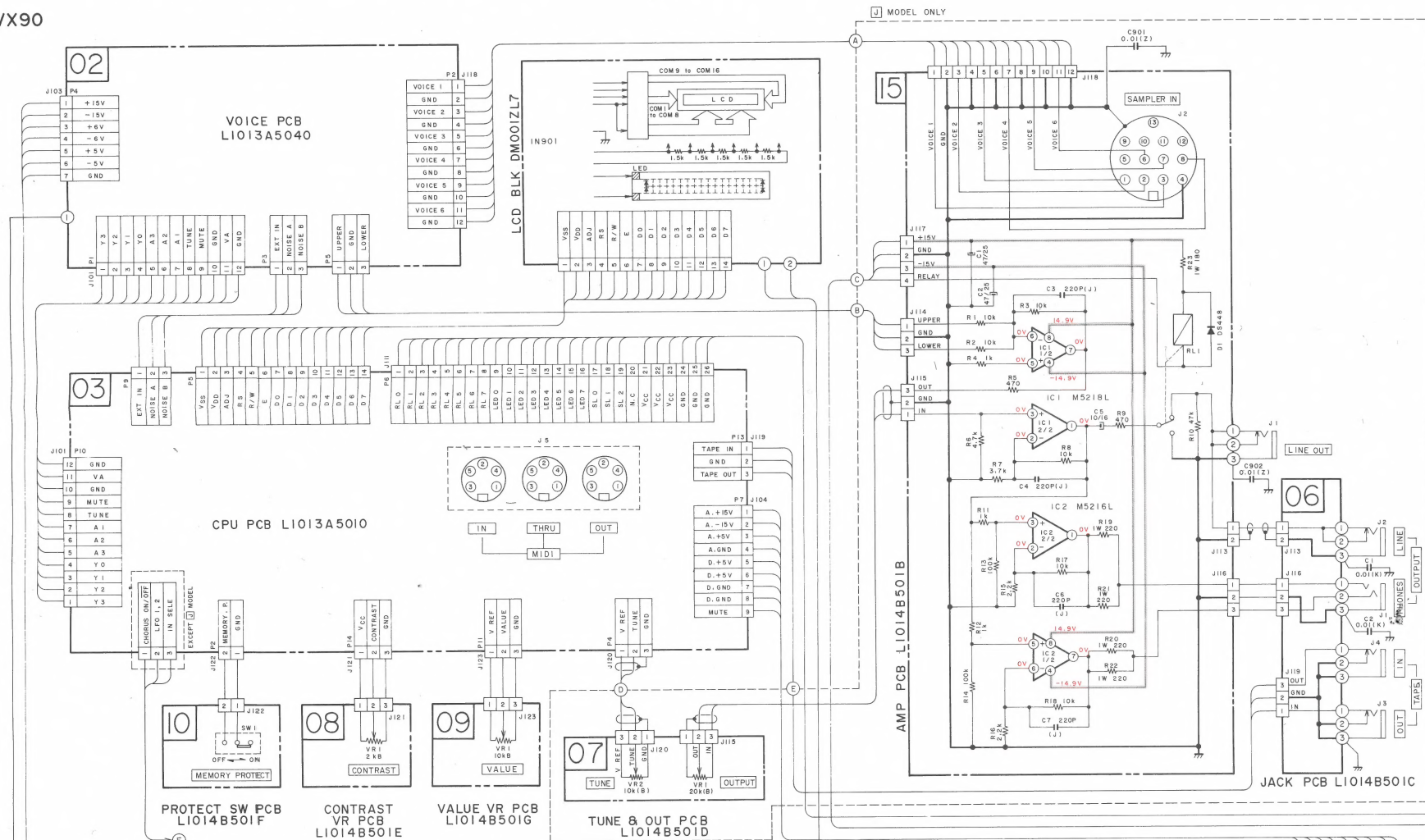
4

5

6

7

8

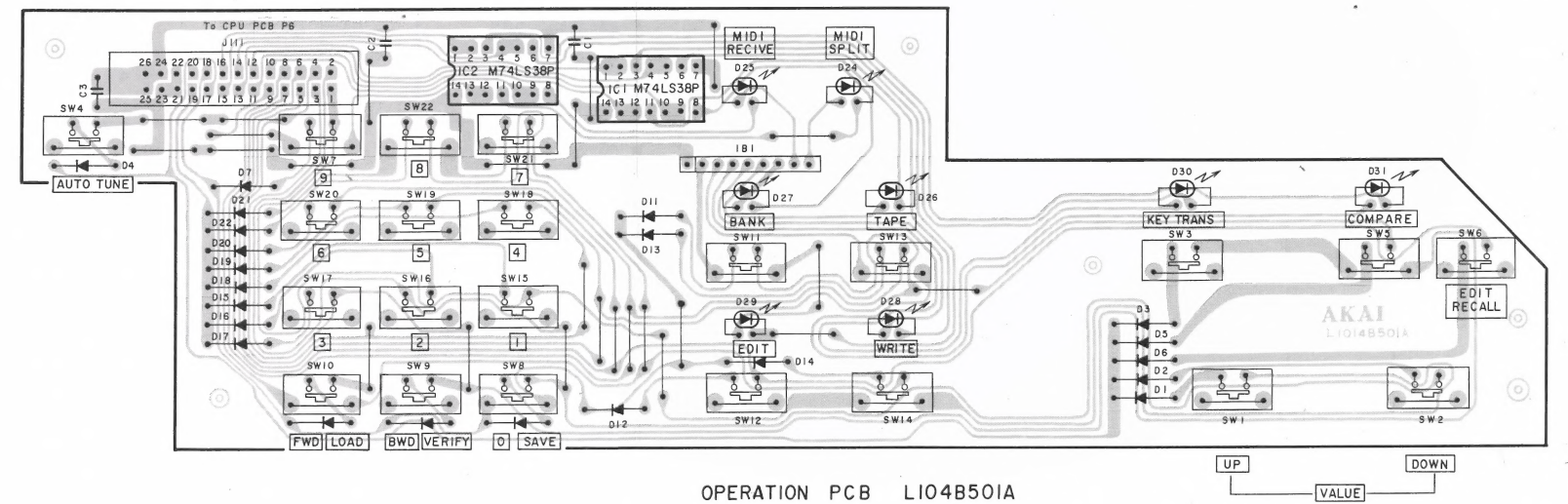
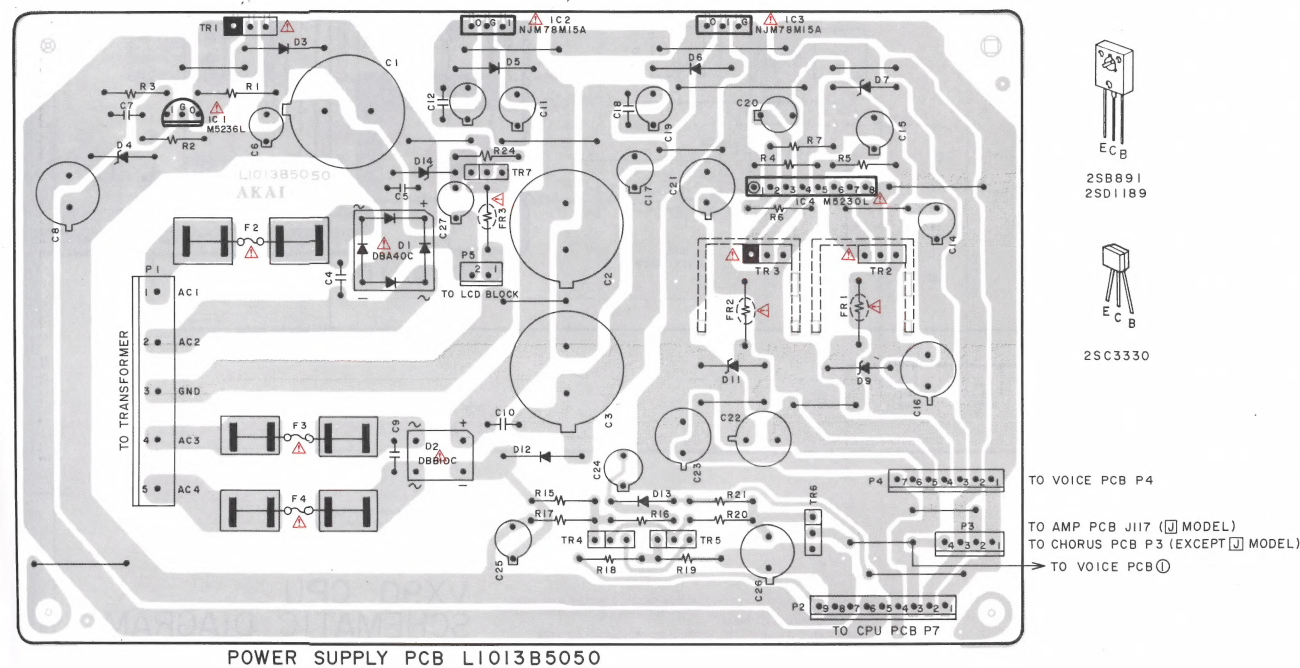
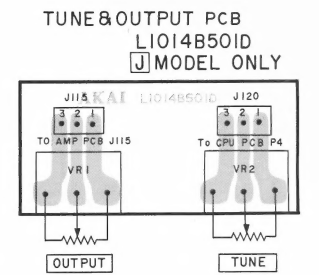
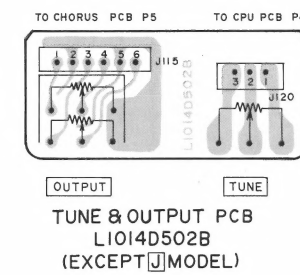
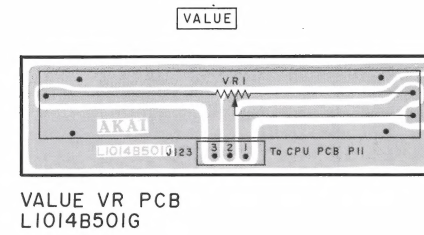
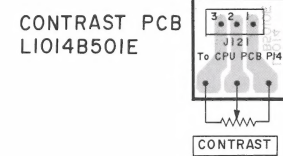
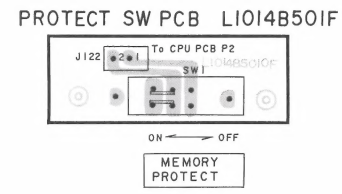
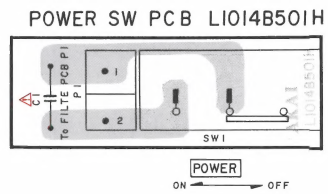
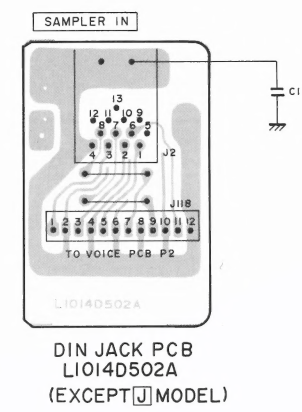
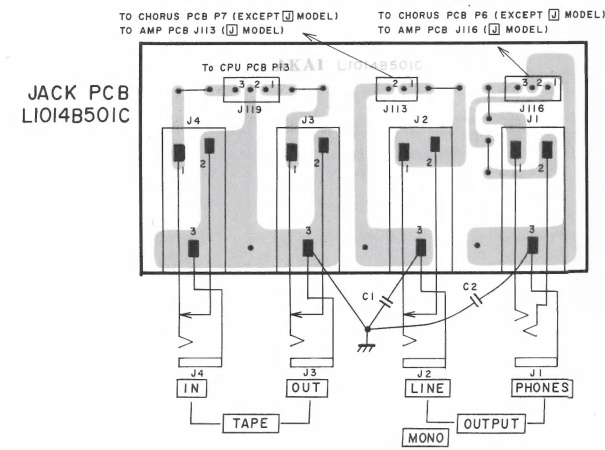
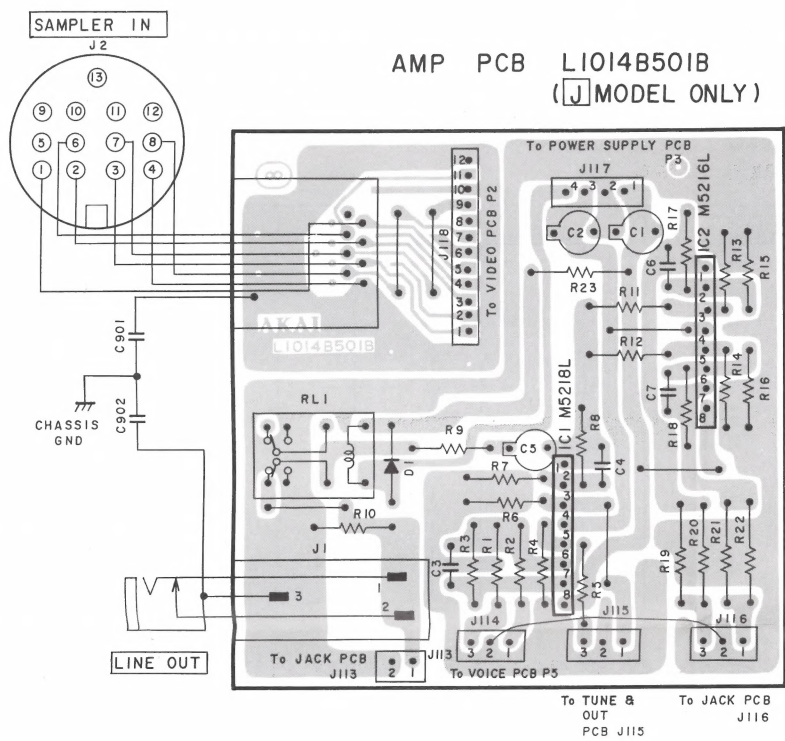


NOTE  
UNLESS OTHERWISE SPECIFIED  
ALL RESISTORS IN OHMS (1/4W)  
ALL CAPACITORS IN  $\mu$ F (50V/1M)  
POWER TRANSFORMER IS DIFFERENT  
ACCORDING TO AREA

備考  
C.R.の単位(特に指定された部品以外)  
抵抗…………… $\Omega$  (1/4W)  
コンデンサ…………… $\mu$ F (50V/1M)  
各電圧は、GND間のDC電圧をデジタルマルチメータにて  
測定した値です

VX90  
CONNECTION DIAGRAM  
No.4-1 860826A

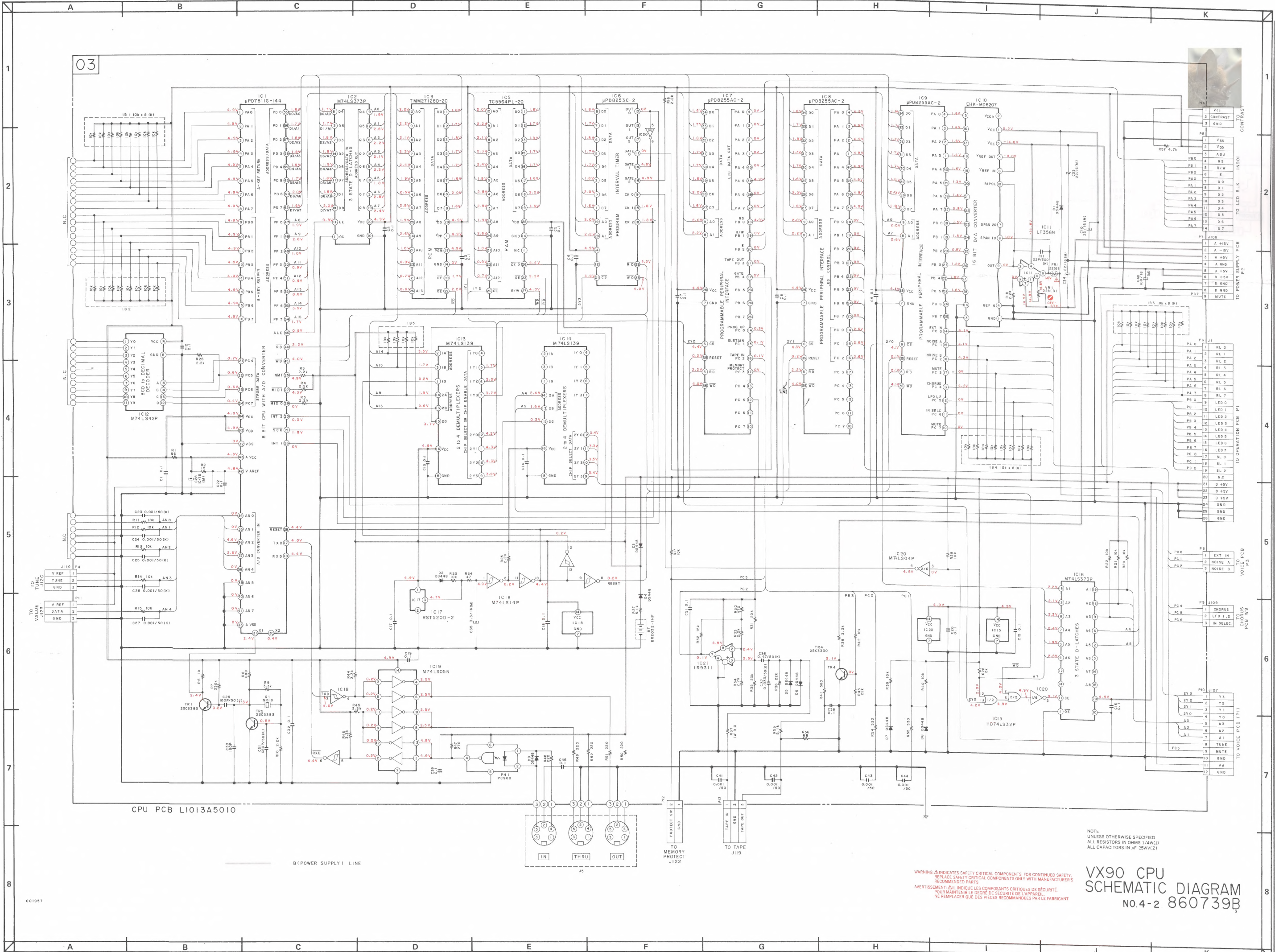




B  
P = PNP TRANSISTOR  
N = NPN TRANSISTOR

WARNING: Δ INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS.  
AVERTISSEMENT: Δ IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDÉES PAR LE FABRICANT.





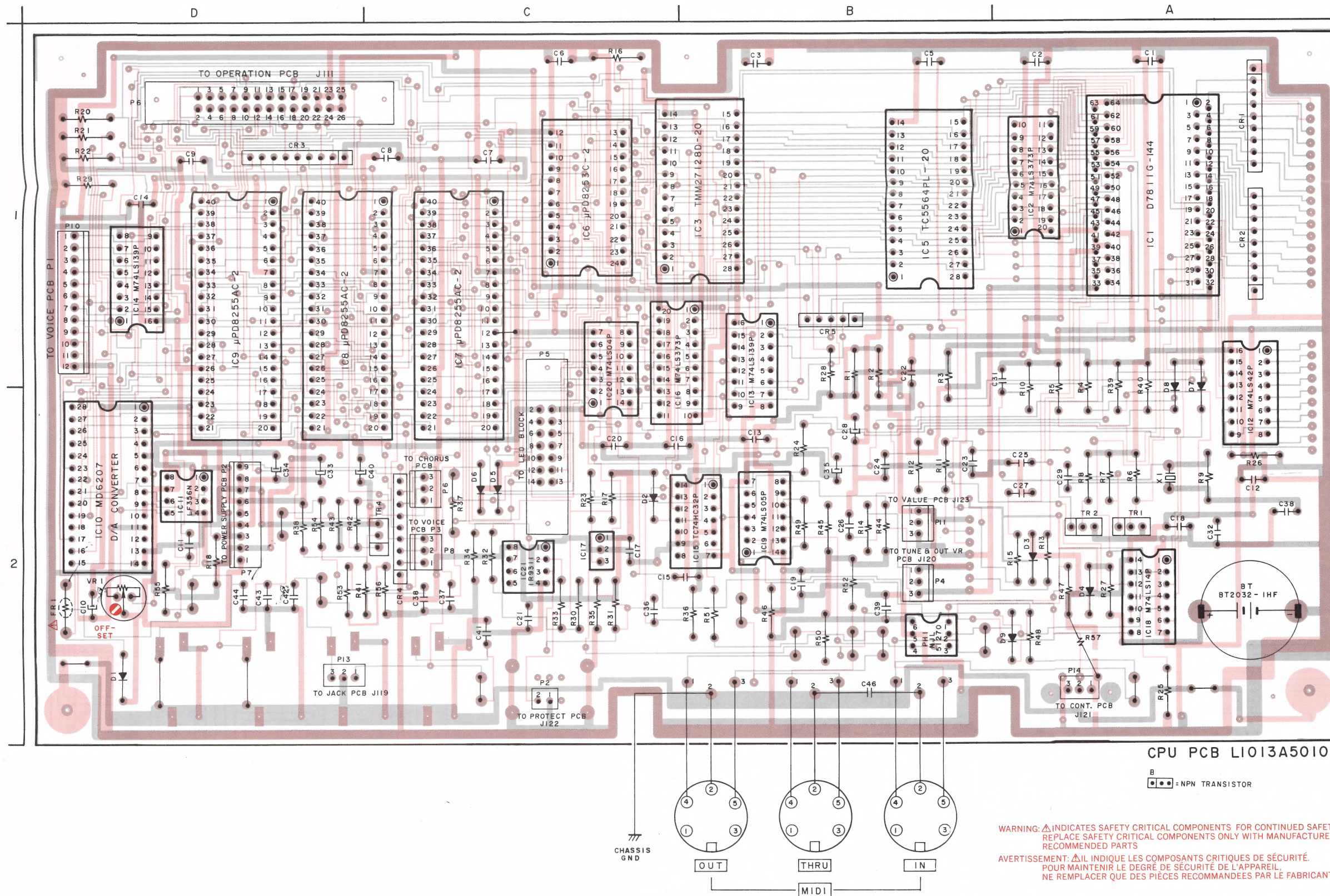
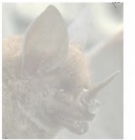
NOTE: UNLESS OTHERWISE SPECIFIED  
ALL RESISTORS IN OHMS (1/4W)  
ALL CAPACITORS IN  $\mu$ F (250V)

WARNING:  $\Delta$  INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY.  
REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S  
RECOMMENDED PARTS

AVERTISSEMENT:  $\Delta$  IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ.  
POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL,  
NE REMPLACER QUE DES PIÈCES RECOMMANDÉES PAR LE FABRICANT

VX90 CPU  
SCHEMATIC DIAGRAM  
NO.4-2 860739B





#### LOCATION OF COMPONENTS

IC1 --- A1	IC12 --- A2
IC2 --- A1	IC13 --- B1
IC3 --- B1	IC14 --- D1
IC5 --- B1	IC15 --- C2
IC6 --- C1	IC16 --- C1
IC7 --- C1	IC17 --- C2
IC8 --- D1	IC18 --- A2
IC9 --- D1	IC19 --- B2
IC10 --- D2	IC20 --- C1
IC11 --- D2	IC21 --- C2

PHI --- B2

TR1 --- A2

TR2 --- A2

TR4 --- C2

TR1,2 --- 2SC3383

TR4 --- 2SC3330



2SC3383



2SC3330

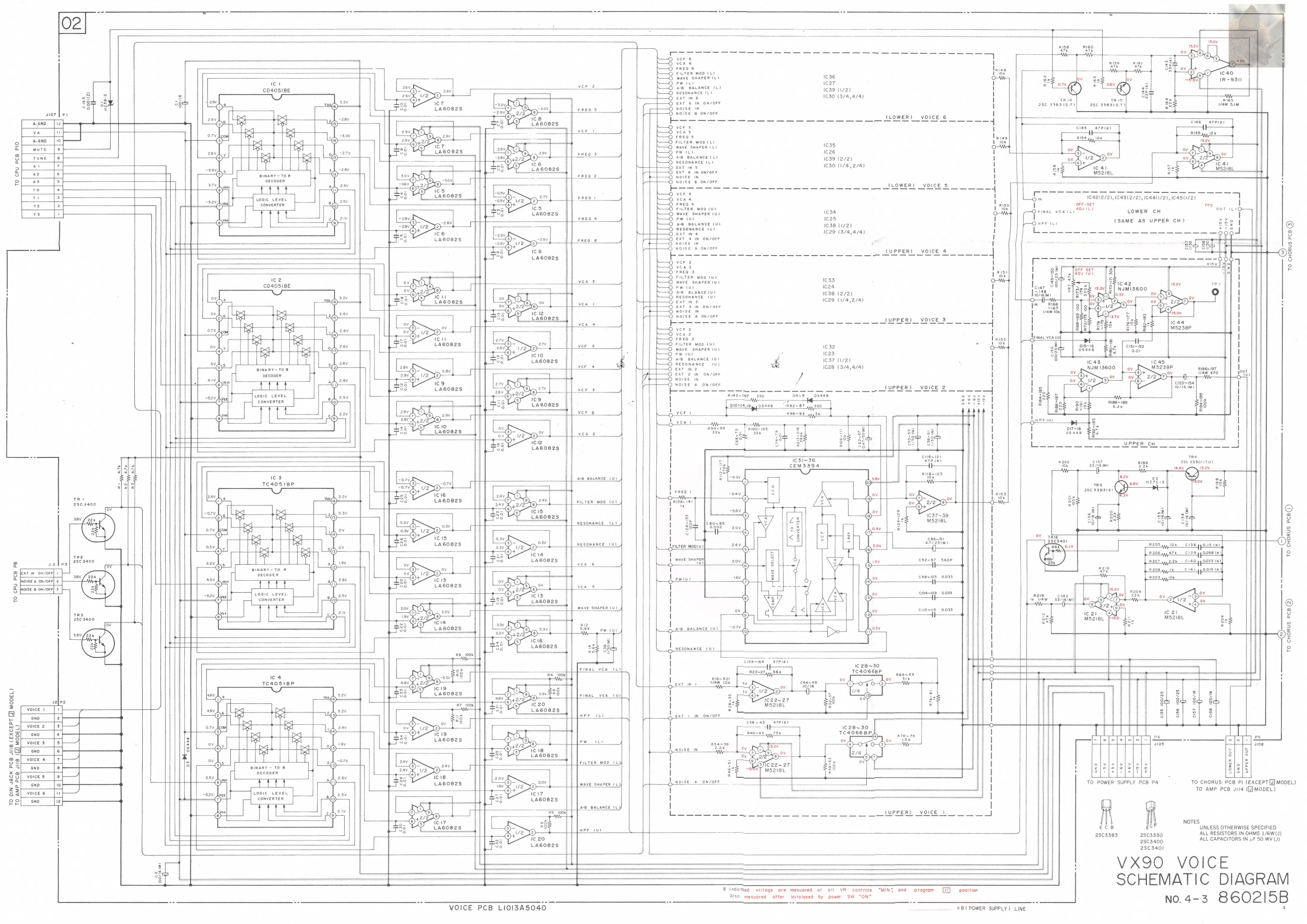
CPU PCB LI013A5010

■ = NPN TRANSISTOR

WARNING:  INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY. REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS.

AVERTISSEMENT:  IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDÉES PAR LE FABRICANT.



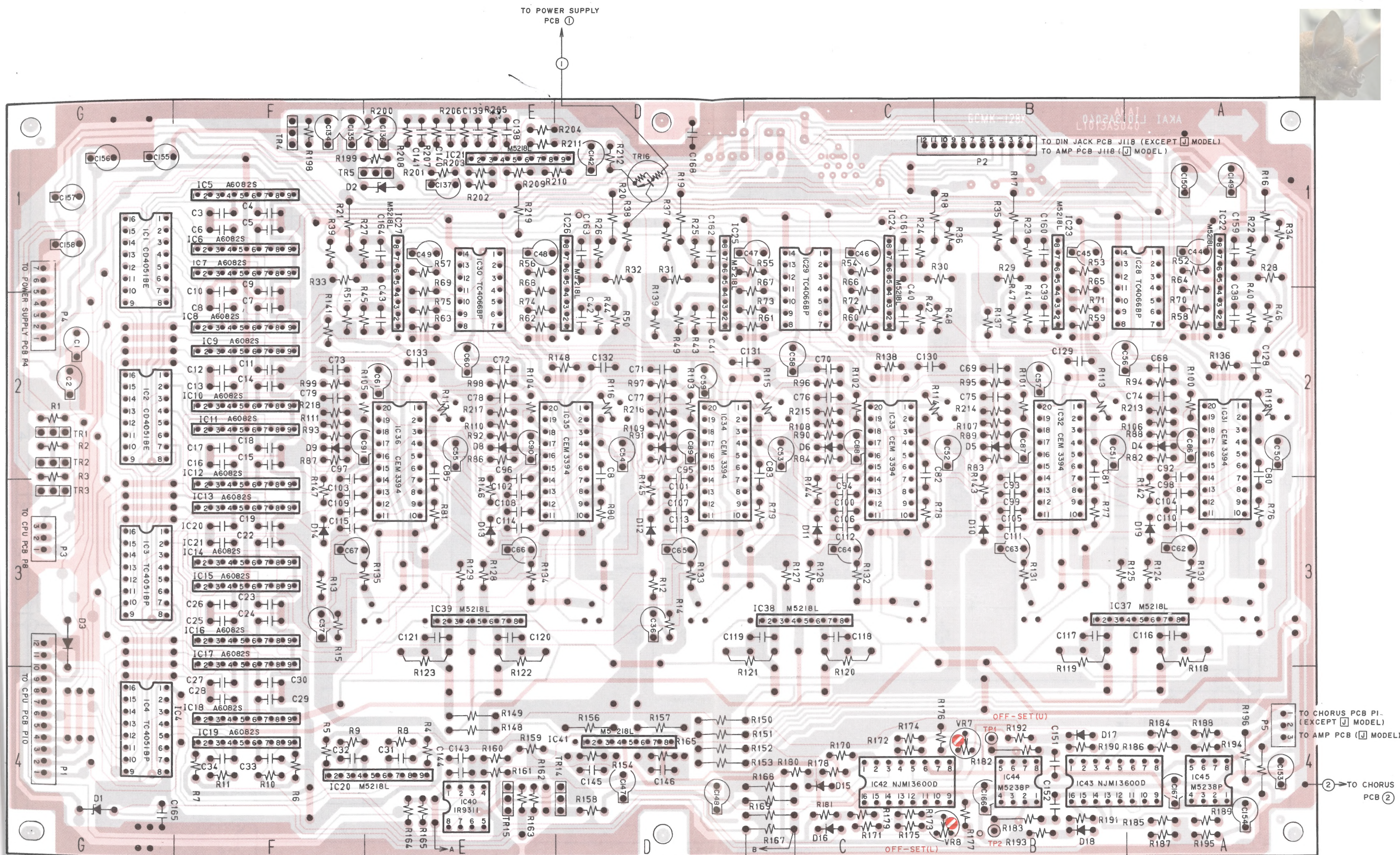


VX90 VOICE  
SCHEMATIC DIAGRAM  
No. 4-3 860215B

\* Indicated voltage are measured at all VR controls "MIN", and program [1] position  
Also measured after initialized by power SW "ON"

=B1 (POWER SUPPLY) LINE





VOICE PCB LI013A5040

TO CHORUS PCB ③

IC1 : G-1	IC11 : F-2	IC21 : E-1	IC31 : A-2	IC41 : D-4	TR1 : G-2	2SC3400.....TR1,2,3
IC2 : G-2	IC12 : F-3	IC22 : A-1	IC32 : B-2	IC42 : C-4	TR2 : G-2	2SC3330.....TR4
IC3 : G-3	IC13 : F-3	IC23 : B-1	IC33 : C-2	IC43 : B-4	TR3 : G-3	2SC3383.....TR5,TR14,TR15
IC4 : G-4	IC14 : F-3	IC24 : C-1	IC34 : D-2	IC44 : B-4	TR4 : F-1	
IC5 : F-1	IC15 : F-3	IC25 : D-1	IC35 : D-2	IC45 : A-4	TR5 : E-1	
IC6 : F-1	IC16 : F-3	IC26 : E-1	IC36 : E-2		TR14 : D-4	
IC7 : F-1	IC17 : F-3	IC27 : E-1	IC37 : A-3		TR15 : E-4	
IC8 : F-2	IC18 : F-4	IC28 : A-1	IC38 : C-3			
IC9 : F-2	IC19 : F-4	IC29 : C-1	IC39 : E-3			
IC10 : F-2	IC20 : E-4	IC30 : E-1	IC40 : E-4			



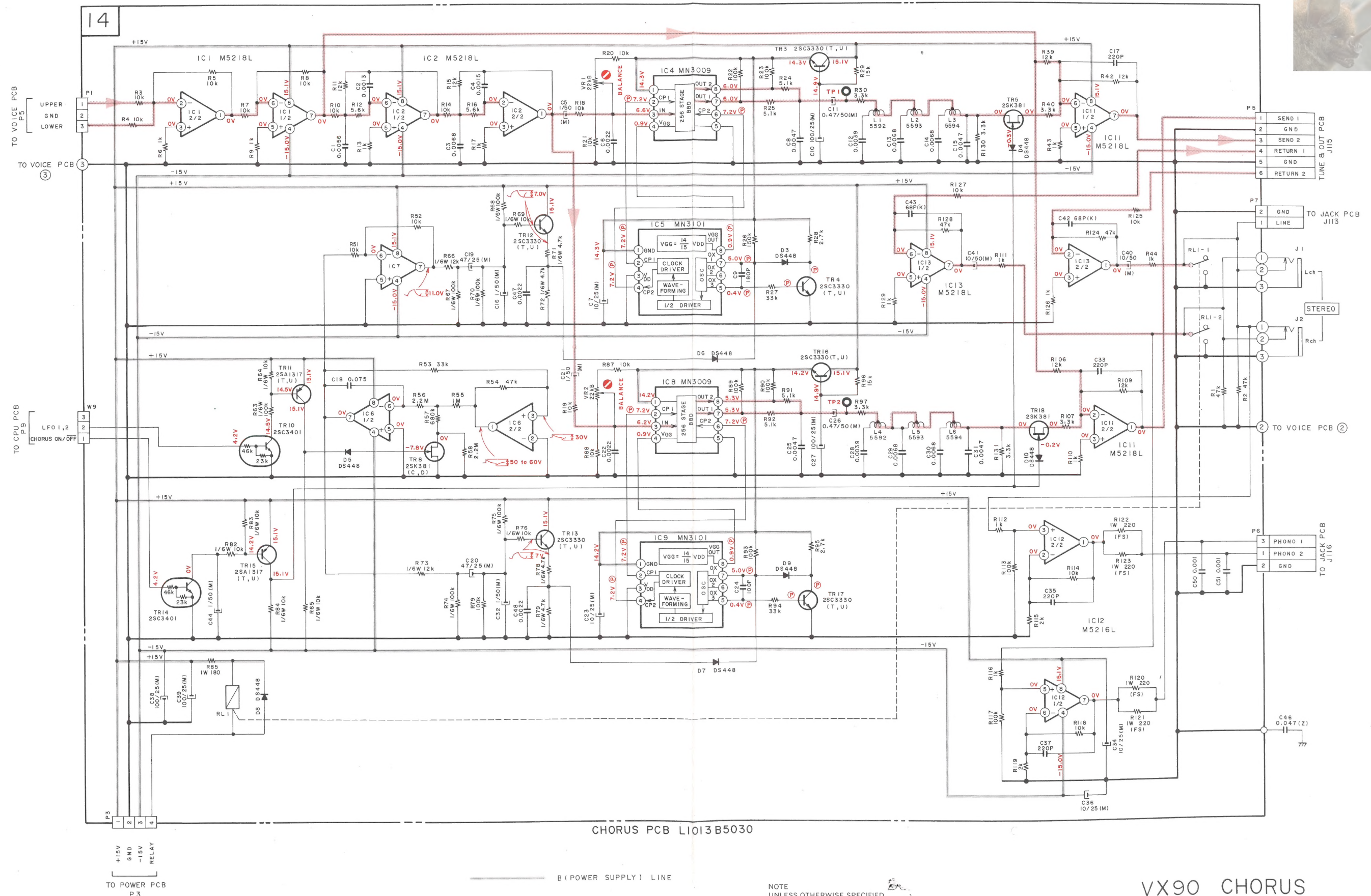
2SC3400  
2SC3330



2SC3383

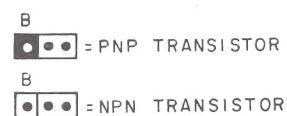


VX90



VX90 CHORUS  
SCHEMATIC DIAGRAM  
NO.4-4 860741C (A2)





ECB

2SC3330  
2SA1317  
2SC3401

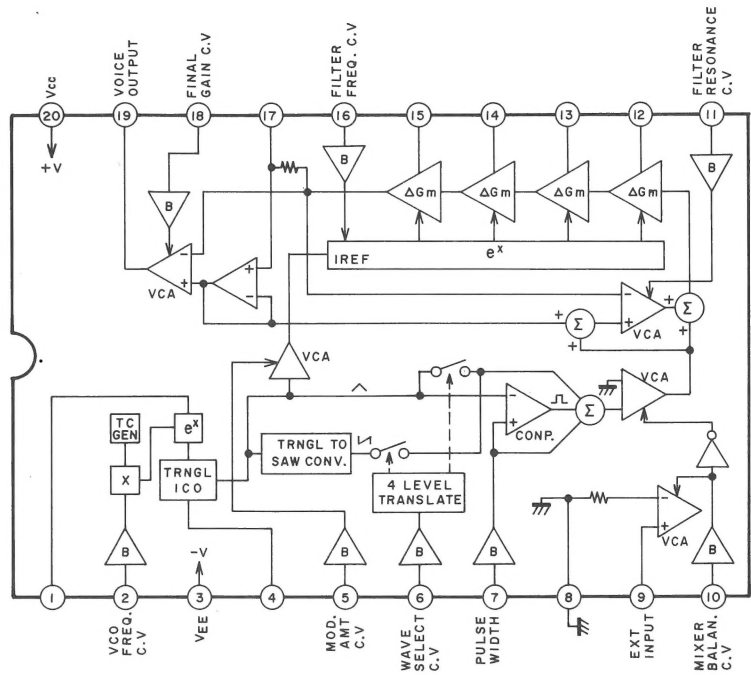


5GD  
2SK381

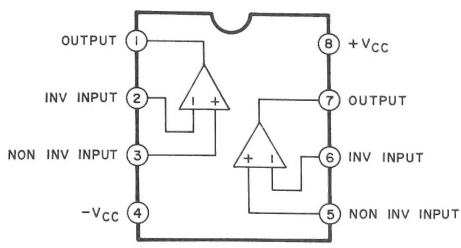
IC's		TR's	
IC1 .....	A1	TR3 .....	A3
IC2 .....	A1	TR4 .....	B3,4
IC4 .....	B3	TR5 .....	A,B1
IC5 .....	B3	TR8 .....	A3
IC6 .....	A3	TR10 .....	B4
IC7 .....	A4	TR11 .....	A4
IC8 .....	A3	TR12 .....	B4
IC9 .....	A3	TR13 .....	A4
IC11.....	B1	TR14 .....	B4
IC12.....	B2	TR15 .....	A4
IC13.....	B2	TR16 .....	A3
		TR17 .....	A3,4
		TR18 .....	A1



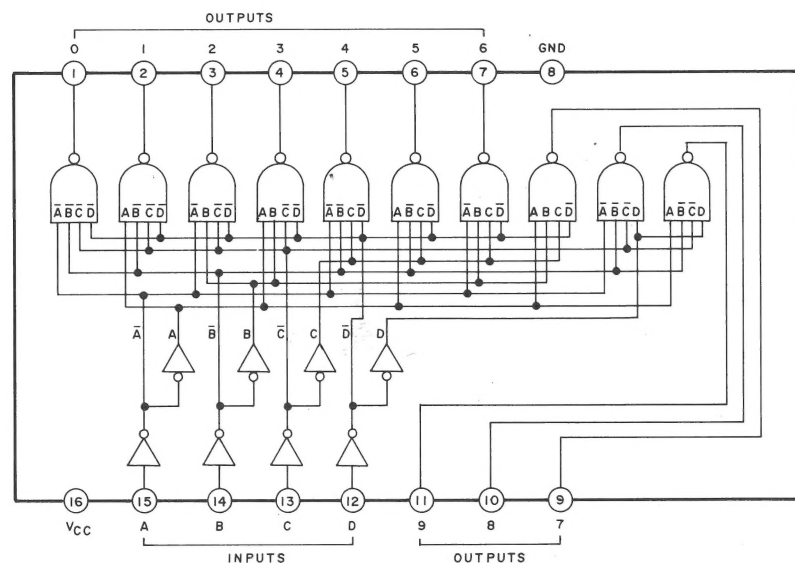




M5218L



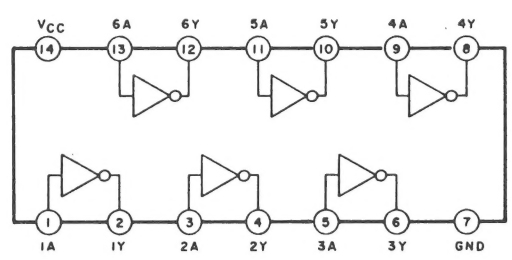
74LS42P (BCD TO DECIMAL DECODER)



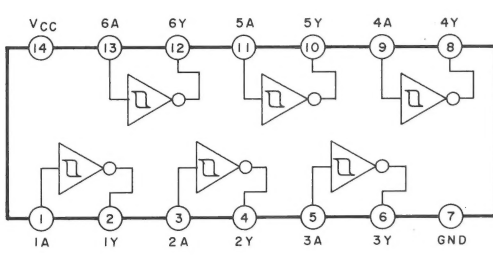
FUNCTION TABLE

NO.	INPUTS				OUTPUTS									
	D	C	B	A	0	1	2	3	4	5	6	7	8	9
0	L	L	L	L	L	H	H	H	H	H	H	H	H	H
1	L	L	L	H	H	L	H	H	H	H	H	H	H	H
2	L	L	H	L	H	H	L	H	H	H	H	H	H	H
3	L	L	H	H	H	H	L	H	H	H	H	H	H	H
4	L	H	L	L	H	H	H	L	H	H	H	H	H	H
5	L	H	L	H	H	H	H	H	L	H	H	H	H	H
6	L	H	H	L	H	H	H	H	H	L	H	H	H	H
7	L	H	H	H	H	H	H	H	H	H	L	H	H	H
8	H	L	L	L	H	H	H	H	H	H	H	L	H	H
9	H	L	L	H	H	H	H	H	H	H	H	H	L	H
INVALID	H	L	H	L	H	H	H	H	H	H	H	H	H	H
	H	L	H	H	H	H	H	H	H	H	H	H	H	H
	H	H	L	L	H	H	H	H	H	H	H	H	H	H
	H	H	L	H	H	H	H	H	H	H	H	H	H	H
	H	H	H	L	H	H	H	H	H	H	H	H	H	H
	H	H	H	H	H	H	H	H	H	H	H	H	H	H

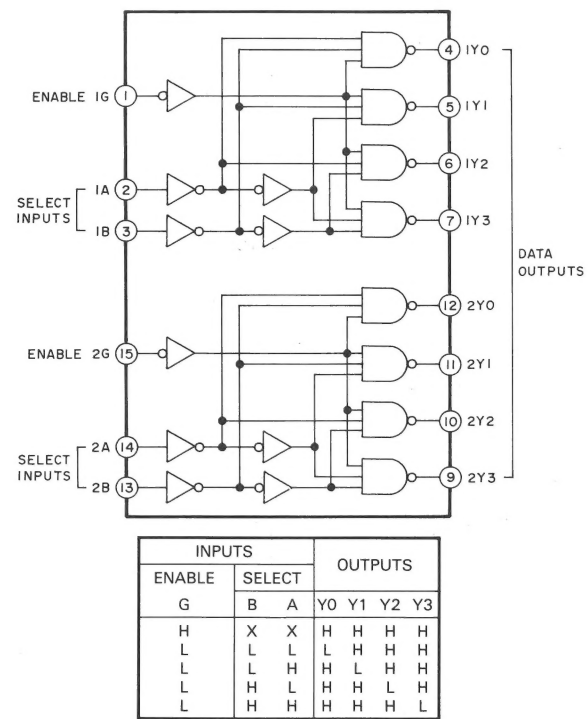
74LS04P (Hex INVETOR)



74LS14P (Hex SCHMIT TRIGGER INVETOR)



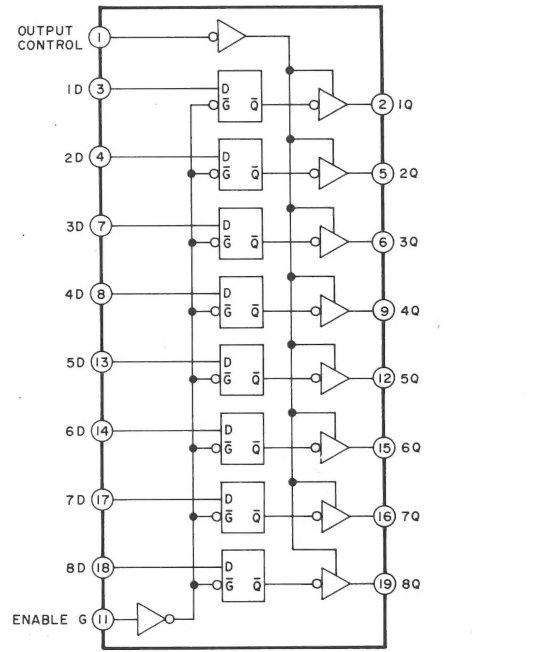
74LS139 (DUAL 2 TO 4 DEMULTIPLEXER)



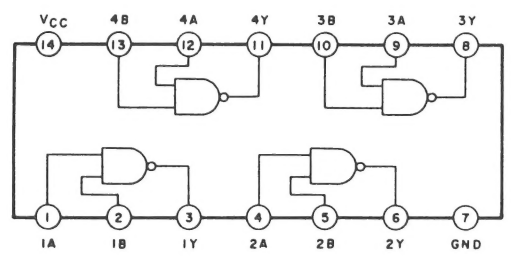
FUNCTION TABLE

INPUTS		OUTPUTS			
ENABLE	SELECT	Y0	Y1	Y2	Y3
H	X	X	X	X	X
L	L	L	L	L	L
L	L	L	L	L	L
L	L	L	L	L	L
L	L	L	L	L	L
L	L	L	L	L	L

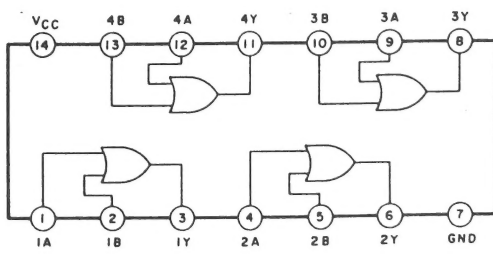
74LS373 (OCTAL 3 STATE D-LATCH)



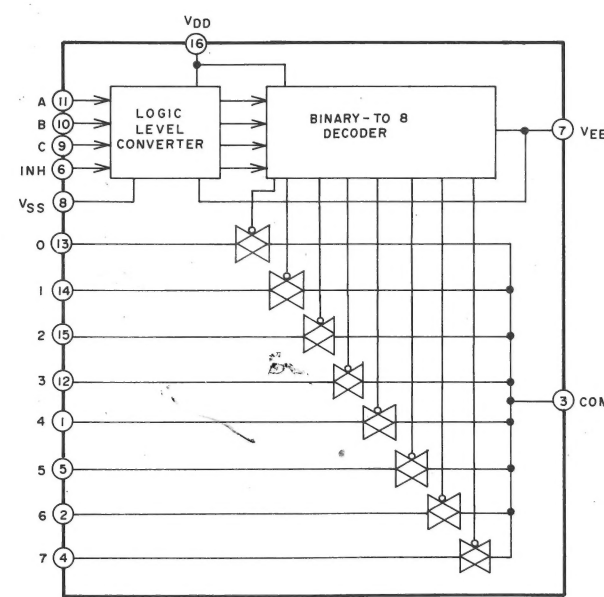
74LS38P (QUAD 2 INPUT OC NAND BUFFER)



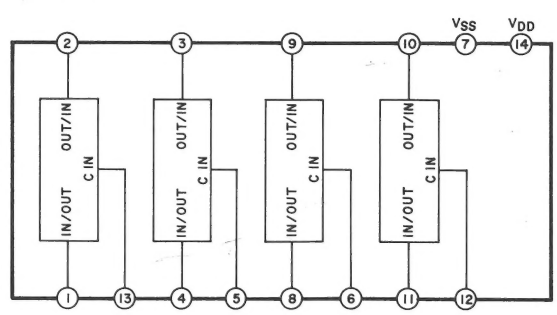
74LS32P (QUAD 2 INPUT OR GATE)



TC4051BP/CD4051BE



TC4066BP



IMPEDANCE BETWEEN IN/OUT - OUT/IN

C IN	IMPEDANCE BETWEEN IN/OUT - OUT/IN
H	0.5 to 5 x 10 <sup>2</sup> OHMS
L	MORE THAN 10 <sup>9</sup> OHMS